

Appl. No. 10/063,097
Docket No. GEN-0206 (41FR-7787)

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (previously presented) A combined current and voltage sensor for sensing current and voltage in a first load strap of one phase of a circuit breaker having a housing, the combined current and voltage sensor comprising:

a combined sensor shell;

a current sensor located in said combined sensor shell, said current sensor disposed proximate to said first load strap; and

a first voltage sensor located in said combined sensor shell, said first voltage sensor disposed proximate to said first load strap;

said current sensor and said voltage sensor of said combined sensor shell disposed in signal communication with only one phase of the circuit breaker; and

said combined sensor shell placeable within the circuit breaker housing.

2-7. (canceled)

8. (original) The combined current and voltage sensor of claim 1, further comprising an electronic trip unit disposed in said circuit breaker and in electrical communication with said first voltage sensor.

9. (original) The combined current and voltage sensor of claim 1, wherein said first voltage sensor includes a transformer.

10. (original) The combined current and voltage sensor of claim 1, wherein said first voltage sensor includes a voltage divider.

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11. (original) The combined current and voltage sensor of claim 10, wherein said voltage divider includes a first resistor in series with a second resistor.

12. (original) The combined current and voltage sensor of claim 1, wherein said combined sensor shell is molded plastic.

13. (previously presented) A circuit breaker having an electronic trip unit and a plurality of phases, the circuit breaker comprising:

a housing;

a first load strap of one of the plurality of phases in electrical communication with the electronic trip unit;

a current sensor disposed at said first load strap; and

a first voltage sensor disposed proximate said current sensor;

wherein said current sensor and said first voltage sensor are housed in a combined sensor shell and are in signal communication with only the one of the plurality of phases, said combined sensor shell disposed within said circuit breaker housing.

14. (previously presented) The circuit breaker of claim 13, further comprising a second voltage sensor disposed proximate to a second load strap of a second phase of the plurality of phases and a third voltage sensor disposed proximate to a third load strap of a third phase of the plurality of phases.

15. (previously presented) The circuit breaker of claim 14, further comprising a detachable configuration plug in electrical communication with said first voltage sensor, said second voltage sensor, and said third voltage sensor.

16. (previously presented) The circuit breaker of claim 15, wherein said configuration plug is in direct electrical connection with said voltage sensors, and said voltage sensors are in direct electrical connection with said load straps.

17. (original) The circuit breaker of claim 15, wherein said configuration plug is in direct electrical connection between said load straps and said voltage sensors.

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18. (previously presented) The circuit breaker of claim 15, wherein said configuration plug is operable to configure said first voltage sensor, said second voltage sensor, and said third voltage sensor in a wye configuration with said first load strap, said second load strap, said third load strap, and a neutral line.

19. (previously presented) The circuit breaker of claim 15, wherein said configuration plug is operable to configure said first voltage sensor, said second voltage sensor, and said third voltage sensor in a delta configuration with said first load strap, said second load strap, said third load strap.

20. (canceled)

21. (original) The circuit breaker of claim 13, wherein said first voltage sensor includes a transformer.

22. (original) The circuit breaker of claim 13, wherein said first voltage sensor includes a voltage divider.

23. (original) The circuit breaker of claim 22, wherein said voltage divider includes a first resistor in series with a second resistor.

24. (previously presented) A multiphase circuit breaker having an electronic trip unit, the circuit breaker comprising:

a first, a second, and a third load strap of a first, a second, and a third phase, each load strap in electrical communication with the electronic trip unit;

a first voltage sensor disposed at said first load strap;

a second voltage sensor disposed at said second load strap;

a third voltage sensor disposed at said third load strap; and

a detachable configuration plug in electrical communication with said first, said second, and said third voltage sensor;

wherein said configuration plug is operable to configure said first, said second,

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and said third voltage sensor in a wye configuration and/or a delta configuration with respect to said first, said second, and said third load strap.

25-26. (canceled)

27. (previously presented) The circuit breaker of claim 24, wherein said configuration plug is in direct electrical connection with said voltage sensors and said voltage sensors are in direct electrical connection with said load straps.

28. (previously presented) The circuit breaker of claim 24, wherein said configuration plug is in direct electrical connection between said load straps and said voltage sensors.

29-30. (canceled)

31. (original) The circuit breaker in claim 24, wherein said first voltage sensor includes a transformer.

32. (original) The circuit breaker in claim 24, wherein said first voltage sensor includes a voltage divider.

33. (original) The circuit breaker in claim 32, wherein said voltage divider includes a first resistor in series with a second resistor.

34-37. (canceled)

38. (previously presented) A device for a multiphase circuit breaker comprising a detachable configuration plug operable to configure a plurality of circuit breaker voltage sensors with a plurality of circuit breaker load straps as a delta configuration or a wye configuration.

39. (canceled)

40. (original) The sensor of claim 38, wherein said configuration plug has a switch to select said wye configuration or said delta configuration.

41. (previously presented) A multiphase circuit breaker comprising:

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a plurality of load straps;
a plurality of voltage sensors disposed proximate to said load straps; and
a detachable configuration plug in electrical communication with said voltage sensors, said configuration plug operable to configure said voltage sensors with said load straps as a delta configuration or a wye configuration.

42. (canceled)

43. (original) The sensor of claim 41, wherein said configuration plug has a switch to select said wye configuration or said delta configuration.

44-46. (canceled)

47. (previously presented) A multiphase circuit breaker, comprising:
a housing having a current path in one of the plurality of phases;
an electronic trip unit; and
a unitary shell having a first portion and a second portion, the unitary shell disposed within said housing proximate said current path;
wherein said first portion comprises a current sensor for sensing current at only the one phase, said current sensor in signal communication with said electronic trip unit;
wherein said second portion comprises a voltage sensor for sensing voltage at only the one phase, said voltage sensor in signal communication with said electronic trip unit;
and
wherein said current sensor, said voltage sensor and said unitary shell are all disposed for signal communication with only the one phase of the multiphase circuit breaker.

48. (previously presented) The multiphase circuit breaker of Claim 47, further comprising:

second and third current paths in a second and a third of the plurality of phases,

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respectively; and

second and third unitary shells each having first and second portions, and each disposed within said housing proximate said second and third current paths, respectively, wherein each of said first portion comprises a current sensor for sensing current at only the respective phase and being in signal communication with said electronic trip unit, and wherein each of said second portion comprises a voltage sensor for sensing voltage at only the respective phase and being in signal communication with said electronic trip unit;

wherein said second current sensor, said second voltage sensor and said second unitary shell are all disposed for signal communication with only the second phase of the multiphase circuit breaker; and

wherein said third current sensor, said third voltage sensor and said third unitary shell are all disposed for signal communication with only the third phase of the multiphase circuit breaker.

49. (previously presented) The multiphase circuit breaker of Claim 48, further comprising:

a detachable configuration plug in signal communication with said first, second and third voltage sensors, said configuration plug operable to configure said first, second and third voltage sensors with said first, second and third current paths as a delta configuration, a wye configuration, or any combination comprising at least one of the foregoing configurations.

50. (new) A multiphase circuit breaker having a plurality of phases, comprising:

a housing having a current path in each of the plurality of phases;

an electronic trip unit; and

a sensor shell disposed within said housing proximate each of said current path in

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each of the plurality of phases;

wherein each sensor shell is made of a molded insulative material, and has a first cavity comprising a current sensor for sensing current at only one of the plurality of phases, said current sensor in signal communication with said electronic trip unit, and said second cavity comprising a voltage sensor for sensing voltage at only said one phase of the plurality of phases, said voltage sensor in signal communication with said electronic trip unit; and

wherein each of said current sensor, said voltage sensor and said sensor shell are disposed for signal communication with only one phase of the plurality of phases of the multiphase circuit breaker.